WHAT IS CLAIMED IS:

1. A magnetic random access memory comprising:

a substrate;

a magnetoresistance element which includes a ferromagnetic layer having an invertible spontaneous magnetization, which varies in resistance according to a direction of said spontaneous magnetization, and is formed above said substrate; and

a wiring which extends in a first direction and is used to make an electric current flow to generate a magnetic field to be applied to said magnetoresistance element,

wherein said wiring is formed so as to pass through a first position which is closer to said substrate than said magnetoresistance element and does not overlap said magnetoresistance element when viewed from a direction perpendicular to a main surface of said substrate, and a second position being above said magnetoresistance element.

2. The magnetic random access memory according to claim 1,

wherein a direction of said magnetic field is substantially the same direction as the direction of said spontaneous magnetization.

3. The magnetic random access memory according to claim 1,

wherein said wiring is formed so as to pass through a third position closer to said substrate than said magnetoresistance element, and

wherein said first position and said third position are located such that said magnetoresistance element is located between said first position and third position when viewed from a direction perpendicular to said main surface of said substrate.

4. The magnetic random access memory according to claim 1, further comprising:

a first insulating film formed so as to cover said substrate, and

a second insulating film,

wherein said magnetoresistance element is formed on said first insulating film, and

wherein said second insulating film is formed on said first insulating film and joined to a side face of said magnetoresistance element to insulate said wiring and said magnetoresistance element from each other.

5. The magnetic random access memory according to claim 4,

wherein said first insulating film has a wiring forming face and a magnetoresistance element forming face,

wherein said magnetoresistance element forming face is located further from said substrate than said wiring forming face,

wherein said magnetoresistance element is formed on said magnetoresistance element forming face, and

wherein a part of said wiring is formed on said wiring forming face.

6. The magnetic random access memory according to claim 5,

wherein said wiring comprises:

a first wiring portion extended along said wiring forming face so as to pass through said first position,

a second wiring portion extended along a side face of said second insulating film substantially perpendicularly to said main surface of said substrate, and

a third wiring portion extended along the upper face of said second insulating film so as to pass through said second position.

7. The magnetic random access memory according to claim 6,

wherein the length of said second wiring portion is longer than the length of said third wiring portion.

8. The magnetic random access memory according to claim 5,

wherein said wiring comprises:

a first wiring portion extended along said wiring forming face so as to pass through said first position,

a second wiring extended along a side face of said second insulating film inclined to said main surface of said substrate, and

a third wiring portion extended along the upper face of said second insulating film so as to pass through said second position.

9. A magnetic random access memory according to claim 1, further comprising another wiring extended in a second direction substantially perpendicular to said first direction,

wherein said other wiring comprises:

a fourth wiring portion passing through between said magnetoresistance element and said substrate,

a fifth wiring portion located further from said substrate than said fourth wiring portion, and

a sixth wiring portion being provided between said fourth wiring portion and said fifth wiring portion and extended in a direction having a component perpendicular to the main surface of said substrate.

10. A magnetic random access memory according to claim 1,

wherein said ferromagnetic layer is substantially symmetric with respect to a plane of symmetry being substantially perpendicular to said substrate, and

wherein a centerline of said wiring is shifted to said plane of symmetry.

11. The magnetic random access memory according to claim 10,

wherein said wiring has a portion which protrudes from an end of said ferromagnetic layer in a second direction perpendicular to said plane of symmetry toward said second direction and which does not overlap said ferromagnetic layer.

12. The magnetic random access memory according to claim 10, wherein a width of said wiring in the second direction perpendicular to said plane of symmetry is narrower than a length of said ferromagnetic layer in said second direction.

13. A magnetic random access memory comprising:

a substrate;

a magnetoresistance element being formed at an upper surface side of said substrate, having a spontaneous magnetization invertible in parallel or antiparallel with a first direction and being different in resistance according to the direction of said spontaneous magnetization; and

a wiring which extends in a second direction substantially perpendicular to said first direction and is used for making an electric current flow to generate a magnetic field to be applied to said magnetoresistance element,

wherein said wiring is formed so as to pass through a first position not overlapping said magnetoresistance element when viewed from the upper surface side of said substrate and a second position being above said magnetoresistance element, and

wherein said first position is closer to said substrate than said second position.

14. A magnetic random access memory comprising:

a substrate;

a magnetoresistance element being formed above said substrate, having an invertible spontaneous magnetization and being different in resistance according to the direction of said spontaneous magnetization; and

a wiring for making an electric current flow to generate a magnetic field to be applied to said magnetoresistance element,

wherein said electric current has a parallel current component flowing in a direction parallel with a main surface of said substrate and a perpendicular current component flowing in a direction perpendicular to the main surface of said substrate, and

wherein a half or more of the intensity of a magnetic field to be applied to said magnetoresistance element is provided by said perpendicular current component.

15. A magnetic random access memory manufacturing method comprising:

forming a first interlayer insulator film covering a substrate,

forming a magnetoresistance element which comprises a ferromagnetic layer having an invertible spontaneous magnetization and varies in resistance according to the direction of said spontaneous magnetization on said first interlayer insulator film,

forming a second interlayer insulator film outside of said magnetoresistance element,

etching a portion not overlapping said magnetoresistance element of said second interlayer insulator film, and

forming a wiring for applying a magnetic field to said magnetoresistance element along the upper and side faces of said second interlayer insulator film.

16. The magnetic random access memory manufacturing method according to claim 15,

wherein a part of said first interlayer insulator film is exposed by said step of etching a portion of said second interlayer insulator film,

wherein said wiring is formed on said exposed part of said first interlayer insulator film.

17. The magnetic random access memory manufacturing method according to claim 16, further comprising etching said exposed part of said first interlayer insulator film.

18. A magnetic random access memory comprising;

a substrate;

a ferromagnetic layer having an invertible spontaneous magnetization, and formed above the main surface side of said substrate;

a first wiring which extends in a first direction substantially parallel with said substrate and for flowing an electric current to invert said spontaneous magnetization,

wherein said ferromagnetic layer is substantially symmetric with respect to a plane of symmetry being substantially perpendicular to said substrate,

wherein a centerline of said first wiring is shifted to said plane of symmetry.

19. The magnetic random access memory according to claim 18,

wherein said first wiring has a portion which protrudes from an end of said ferromagnetic layer in a second direction perpendicular to said plane of symmetry toward said second direction and which does not overlap said ferromagnetic layer.

20. The magnetic random access memory according to claim 19,

wherein a quantity of offset p is defined by "p = d/L", wherein the distance between said centerline of said first wiring and said plane of symmetry is d, the length of said free ferromagnetic layer in a second direction perpendicular to said plane of symmetry is L, and p is not less than 0.1 and not more than 0.5.

21. The magnetic random access memory according to claim 19,

wherein a width of said first wiring in a second direction perpendicular to said plane of symmetry is narrower than the length of said free ferromagnetic layer in said second direction.

22. The magnetic random access memory according to claim 21,

wherein said width of said first wiring is not less than 0.3 times and not more than 0.7 times said length of said free ferromagnetic layer.

23. The magnetic random access memory according to claim 18,

wherein the direction of said spontaneous magnetization is parallel with said second direction.

24. The magnetic random access memory according to claim 18, further comprising a magnetic layer joined to said first wiring and made of a magnetic material.

25. The magnetic random access memory according to claim 18, further comprising

a second wiring which extends in said second direction and in which a second write current for flowing an electric current to invert said spontaneous magnetization

wherein said ferromagnetic layer is substantially parallel with said second direction and substantially symmetrical with respect to a plane of symmetry being substantially parallel with said second direction and substantially perpendicular to said substrate, and

wherein a centerline of said second wiring is shifted to said plane of symmetry.

26. A magnetic random access memory comprising:

a substrate;

a ferromagnetic layer having an invertible spontaneous magnetization, and formed above the main surface side of said substrate;

a first wiring which extends in a first direction and is electrically connected to said magnetoresistance element; and

a second wiring which extends in said first direction and is electrically insulated from said magnetoresistance element and current for flowing inverting electric current to invert said spontaneous magnetization,

wherein said ferromagnetic layer is substantially symmetric with respect to a plane of symmetry being substantially perpendicular to said substrate, and

wherein a centerline of said first wiring is shifted to said plane of symmetry.

27. The magnetic random access memory according to claim 26, further comprising an interlayer insulator film outside of said magnetoresistance element,

wherein said first wiring and said second wiring are formed on said interlayer insulator film.

28. A magnetic random access memory comprising:

a substrate;

a ferromagnetic layer having an invertible spontaneous magnetization, and formed above the main surface side of said substrate;

a first wiring which extends in a first direction substantially parallel with said substrate and for flowing an electric current to invert said spontaneous magnetization,

wherein said ferromagnetic layer is substantially symmetric with respect to a plane of symmetry being substantially perpendicular to said substrate, and

wherein a position where a magnetic field generated by said electric current is made strongest is shifted to said plane of symmetry.

29. A spontaneous magnetization inversion promoting method comprising:

providing a free ferromagnetic layer having an invertible spontaneous magnetization so as to be substantially symmetric with respect to a plane of symmetry substantially perpendicular to a primary surface of a substrate;

forming a wiring for flowing an electric current to invert said spontaneous magnetization so as to extend in a direction substantially parallel with said substrate and said first plane of symmetry; and

arranging the center line of said wiring so as to shift said center line to said first plane of symmetry.